PL-4

MATERIALS FOR SENSOR DEVICES: FROM PHARMACEUTICAL QUANTIFICATION TO DISEASES DIAGNOSIS

J. R. Garcia,[1] K.Wohnrath,[1] C.A.Pessoa,[1] S. R. de Lazaro,[1] J.Inaba,[1] A. G.Viana,[1] A.Camilo Jr.[2]

[1]Department of Chemistry, State University of Ponta Grossa, Av. Gal. Carlos Cavalcanti, 4748, Uvaranas, Ponta Grossa – PR, Brazil – 84030-900.
[2]Department of Physics, State University of Ponta Grossa, Av. Gal. Carlos Cavalcanti, 4748, Uvaranas, Ponta Grossa – PR, Brazil – 84030-900.

E-mail: jrgarcia@uepg.br

Abstract. The development of new systems for the detection of clinically relevant analytes has attracted the attention of researchers from several fields, who continually strive for the construction of sensitive, selective, and low-cost devices that can detect such compounds in biological samples with good accuracy and precision.[1]

In this context, electrochemical sensors are very promising due to their high degree of selectivity and sensitivity for determining lower concentrations of various analytes.[2] In case of Disease Diagnose, electrochemical immunosensors are among the most studied ones, since such devices combine the high specificity of antibodies with advantages such as sensitivity and fast response. Additionally, the possibility of miniaturization and *in situ* detection make these electrochemical devices promising for applications in quality control, *in vivo* analysis and in point-of-care diagnostics.[3,4]

So it is described the preparation of different kind of materials and strategies for electrodes surface modification and the application of those modified electrodes on the quantification of pharmaceutical interest target molecules. It is also presented the preparation of electrodes suitable for utilization on the diagnosis of different diseases with focus on neglected ones like CHAGAS and ZIKA.

References

1. Pires, N.M.M., Dong, T., Hanke, U., Hoivik, N. (2014). *Sensors*, Vol. 14, pp. 15458–15479.
2. Saleh Ahammad, A.J., Lee, J.-J., Aminur Rahman, Md. (2009). *Sensors*, Vol. 9, p. 22892319.
3. Rama, E.C., Costa-García, A. (2016). *Electroanalysis*, Vol. 28, pp. 1700–1715.
4. Wan, Y., Su, Y., Zhu, X., Liu, G., Fan, C. (2013). *Biosens. Bioelectron*, Vol. 47, pp. 1–11.

*This work was supported by the Paraná State Research Funding Agency (Araucária Foundation – project # FA-SESA **073/2016 - CP 04/2016**) and by the Federal Agencies CAPES and CNPq (project # CNPq PVE **401271/2014-5**).*